

**Vermont Mental Health Performance Indicator Project**  
Agency of Human Services, Department of Health, Division of Mental Health  
Weeks Building, 103 South Main Street, Waterbury, VT 05671-1601

**MEMORANDUM**

TO: Vermont Mental Health Performance Indicator Project  
Advisory Group and Interested Parties

FROM: John Pandiani and Monica Simon

DATE: September 10, 2004

RE: Relative Risk of Cancer Diagnosis for CRT Clients

This week's PIP compares the occurrence of cancer diagnosis among adults receiving Community Rehabilitation and Treatment (CRT) services for serious mental illness with the occurrence of cancer diagnosis among adults in the general population of the State of Vermont. This report follows our January 11, 2002, PIP report that found adults served by CRT programs in Vermont had a substantially elevated risk of mortality due to lung cancer and heart disease<sup>1</sup>. The risk of death due to these causes for adults with serious mental illness was more elevated (compared to the general population) than the risk of death due to other causes for adults with serious mental illness.

The findings presented here are based on analysis of anonymous extracts from the Vermont Cancer Registry maintained by the Department of Health and anonymous extracts from the Monthly Service Report database maintained by the Division of Mental Health. Because these data sets do not include unique person identifiers, Probabilistic Population Estimation (PPE) was used to determine the proportion of individuals served by CRT programs who were also represented in the Cancer Registry during the same year. PPE is a statistical data-mining tool that measures the number of people represented in data sets that do not share unique person identifiers. PPE reports how many people are represented in and across data sets, but does not reveal who the people are. This analysis provides the information necessary to determine the proportion of adults in treatment for a serious mental illness who have a cancer diagnosis as well as the proportion of the total population of the state who have a cancer diagnosis. These calculations were completed for each of eight years (1994 - 2001), and the results were averaged.

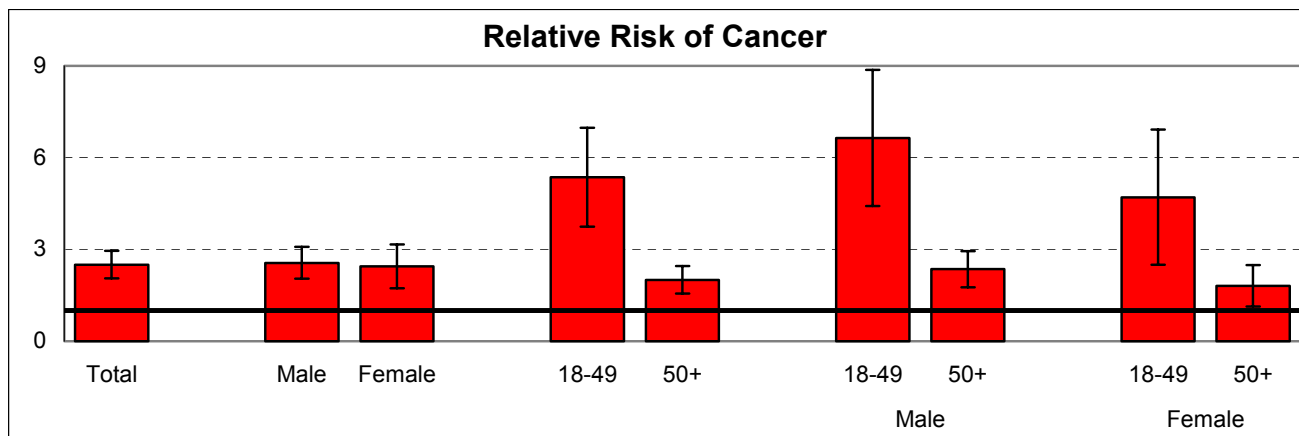
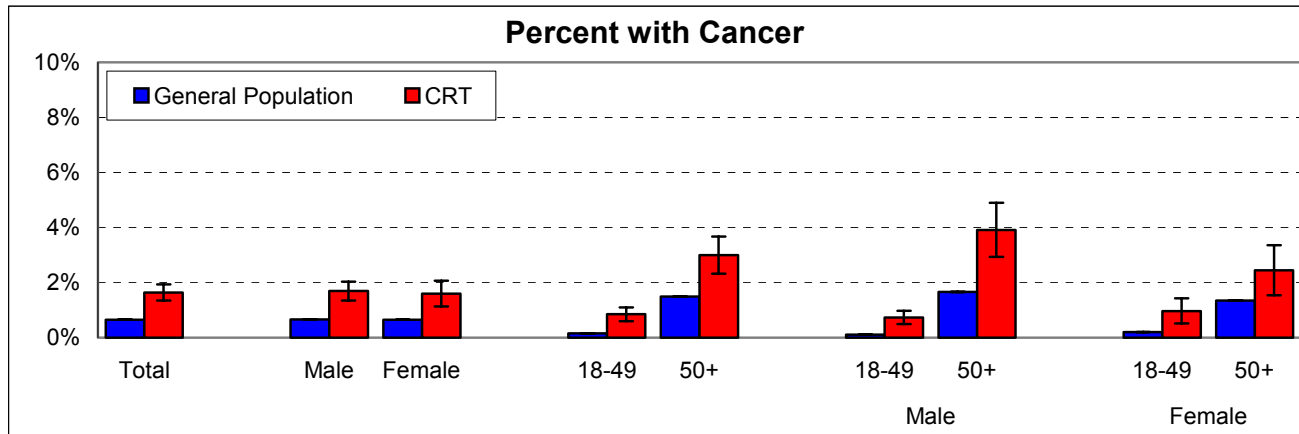
Relative risk is used to compare the proportion of service recipients who have a cancer diagnosis to the proportion of the general population who have a cancer diagnosis. Relative risk was derived by dividing the cancer diagnosis rate for service recipients by the cancer diagnosis rate for the general population of the state of Vermont. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients are twice as likely as other residents to have this trauma history. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have this trauma history.

As you will see, the overall occurrence of cancer for CRT clients was more than twice that of the general population. The relative risk of cancer was similar for men and women, but adults less than 50 years of age had much greater relative risk than older adults. Men with serious mental illness who were under 50 years of age were more than 6 times as likely to have a cancer diagnosis as men in the same age group in the general population during the same year. Women with serious mental illness who were under 50 years of age were more almost 5 times as likely to have a cancer diagnosis as women in the same age group in the general population during the same year.

We look forward to your interpretation of these findings and your suggestions for further analysis of these data. As always, you can reach us at [pip@ddmhs.state.vt.us](mailto:pip@ddmhs.state.vt.us) or 802-241-2638.

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- 1 Mortality and Cause of Death for CRT Clients. Pandiani & Simon. January 11, 2002. <http://www.ddmhs.state.vt.us/docs/pips/2002/pip011102.pdf> Pandiani & Simon.

## Community Rehabilitation and Treatment Clients and General Population with a Cancer Diagnosis During the Year Receiving MH Services Served During: CY1994 - CY2001



	General Population		CRT Clients		Relative Risk of Cancer
	Number*	Percent w/ Cancer	Number Served*	Percent w/ Cancer	
Total	453,506	0.7% ± 0.00%	3,317 ± 9	1.6% ± 0.3%	2.5 ± 0.5
Male	218,741	0.7% ± 0.00%	1,525 ± 6	1.7% ± 0.3%	2.6 ± 0.5
Female	234,765	0.7% ± 0.00%	1,792 ± 7	1.6% ± 0.5%	2.4 ± 0.7
18-49	284,656	0.2% ± 0.00%	2,096 ± 8	0.8% ± 0.3%	5.4 ± 1.6
50+	168,850	1.5% ± 0.00%	1,221 ± 5	3.0% ± 0.7%	2.0 ± 0.5
Male 18-49	141,225	0.1% ± 0.00%	1,065 ± 5	0.7% ± 0.2%	6.6 ± 2.2
50+	77,517	1.7% ± 0.01%	460 ± 3	3.9% ± 1.0%	2.4 ± 0.6
Female 18-49	143,431	0.2% ± 0.00%	1,031 ± 5	1.0% ± 0.5%	4.7 ± 2.2
50+	91,333	1.4% ± 0.01%	761 ± 4	2.4% ± 0.9%	1.8 ± 0.7

\*Analysis is based on data provided by the community mental health centers and the Vermont Cancer Registry. Analysis includes adults served by a Community Rehabilitation and Treatment Program (CRT) in a calendar year and adults diagnosed with cancer during the same calendar year (CRT CY1994 was analyzed with Cancer CY1994, etc). The analysis was completed for each of eight years and results were averaged. Because these data sets do not share unique person identifiers, Probabilistic Population Estimation was used to determine caseload size and overlap (with 95% confidence intervals). Relative risk was derived by dividing the rate of cancer diagnoses among service recipients by the rate of cancer in the general population. A relative risk of "1" would mean there is no difference between the two rates. A relative risk of "2" would mean that service recipients are twice as likely as other residents to have a cancer diagnosis. A relative risk of "0.5" would mean that service recipients are half as likely as other residents to have a cancer diagnosis.